A Comparison of Two Rapid Biological Assessment Sampling Methods for Macroinvertebrates

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Keywords: macroinvertebrates, method comparison, collaboration, biological assessment, decision-making

In 2003, the Office of Research and Development's (ORD's) National Exposure Research Laboratory (NERL) initiated a collaborative research effort with U.S Environmental Protection Agency's (U.S. EPA) Region 3 to conduct a study comparing two rapid biological assessment methods for collecting stream macroinvertebrates. One method focuses sampling in a single fast-water habitat (riffles), and the other samples multiple habitats within a stream. The single-habitat method has been widely used in the U.S. for biological assessment of streams for over a decade. However, Region 3 biologists recognized that in the Piedmont and Northern Piedmont regions of the U.S., riffle habitat is less abundant in streams. In streams of these regions, the traditionally used single-habitat method was compared with the more recently proposed multiple-habitat sampling method to determine whether the multiple-habitat method is more effective in these streams. The success of this study depended on a strong collaboration between U.S. EPA Region 3 and the ORD to select sites, conduct field sampling, and analyze the data. While the ORD scientists were responsible for careful analysis of those data, Region 3 biologists were instrumental in helping the NERL put research results into a context useful to state agencies. Region 3 was able to involve biologists at the Virginia Department of Environmental Quality in this process, providing valuable feedback on specific aspects of analysis. As a result of the collaboration between the ORD and Region 3, the results of this methods comparison study will have a more immediate impact on decision-making at the state level.

Although this work was reviewed by the U.S. EPA and approved for publication, it may not necessarily reflect official Agency policy.